Case Study

Los Angeles Department of Water and Power

High Temperature Carbonate Fuel Cell Demonstrations
Los Angeles Department of Water and Power

Because of the many benefits of deploying fuel cells in Los Angeles, the Los Angeles Department of Water and Power (LADWP) is committed to be an active participant in developing fuel cells to become part of our energy resource mix. High temperature fuel cells, such as carbonate and solid oxide, have particular benefits that include high electrical efficiency. Quality waste-heat, due to their high temperature, can be utilized in both heating and air-conditioning systems. The current high cost and limited operational experience with fuel cells present key challenges in setting up systems to communicate and educate every stakeholders, including our customers, concerning issues and benefits regarding fuel cell systems.

LADWP is committed to a cleaner environment, and to increasing energy conservation; its fuel cell demonstration projects are part of this commitment. For the future, LADWP will continue to work to improve its environmental performance and to maintain its reputation as a safety focused and reliable service provider that has high level of customer satisfaction and employee morale. LADWP will also work to continue its leadership in fuel cell field deployment and to remain a technology partner and advisor to the utility industry at large.

The LADWP support for fuel cell development and demonstration programs includes the first commercial design high temperature direct fuel cell in North America. This plant operating at LADWP's headquarters was dedicated on March 14th, 2003. LADWP is currently operating three high temperature fuel cells, including one at a water treatment plant that is scheduled to begin operation on renewable digester gas by the summer of 2004.

In June 2000, the LADWP contracted with FCE to install and commission a pre-commercial 250kW MCFC power plant. The plant was delivered, installed, and began power production at its headquarters in August 2001. An 18th month field trial was successfully completed in January 2003, when

it was replaced with the commercial design plant mentioned above. The U.S. Department of Energy is providing grants totaling $950,000 for the LADWP fuel cell installations through its “Climate Change Fuel Cell Program”.

High temperature fuel cells offer the promise of energy conservation through integrated local energy systems that produce both electricity and useful heat. Energy losses through transmission and distribution systems will be reduced and, in addition, new construction of transmission and distribution systems may be deferred or avoided.

The LADWP is committed to the development and implementation of new safe, clean and sustainable technologies like fuel cells.

This 250kW capacity, Fuel Cell Energy DFC 300 was installed at the main downtown office building of the Los Angeles Department of Water and Power in early 2003.